

Amendments to the Claims

This listing of claims, if entered, will replace all prior versions and listings of claims in the above-identified application.

Listing of Claims

1. **(Currently Amended)** A method comprising:
providing a coordinator virtual device corresponding to ~~at least~~ a portion of a
physical data storage device;
detecting when a computer system cluster, including a plurality of nodes, is
partitioned;
a first node of the plurality of nodes attempting to gain control of the coordinator
virtual device; and
removing ~~at least one~~ the first node of the plurality of nodes from the computer
system cluster when the attempting is unsuccessful so that the first node of
the plurality of nodes lacks access to the portion of the physical data
storage device.
2. **(Currently Amended)** The method of claim 1 wherein the providing ~~[[a]] the~~
coordinator virtual device corresponding to ~~the at least a~~ portion of ~~[[a]] the~~ physical data
storage device further comprises:
selecting the ~~at least a~~ portion of ~~[[a]] the~~ physical data storage device;
associating a physical description of the ~~at least a~~ portion of ~~[[a]] the~~ physical data
storage device with a coordinator virtual device identifier; and
allowing at least one of the plurality of nodes of the computer cluster to access the
~~at least a~~ portion of ~~[[a]] the~~ physical data storage device via the
coordinator virtual device identifier.
3. **(Currently Amended)** The method of claim 1 wherein the providing ~~[[a]] the~~
coordinator virtual device corresponding to ~~the at least a~~ portion of ~~[[a]] the~~ physical data
storage device is performed by at least one virtual device configuration server.

4. **(Original)** The method of claim 3 wherein the at least one virtual device configuration server is separate from the plurality of nodes of the computer cluster and wherein at least one of the plurality of nodes of the computer cluster further comprises a virtual device configuration client.

5. **(Currently Amended)** The method of claim 1 further comprising:
reading cluster membership information from the coordinator virtual device
corresponding to the ~~at least a~~ portion of ~~[[a]]~~ the physical data storage
device.

6. **(Currently Amended)** The method of claim 1 wherein the detecting when
~~[[a]]~~ the computer system cluster, including ~~[[a]]~~ the plurality of nodes, is partitioned
further comprises:

reading, as performed by one of the plurality of nodes, cluster membership
information from the coordinator virtual device corresponding to the ~~at~~
~~least a~~ portion of ~~[[a]]~~ the ~~of a~~ physical data storage device; and
determining whether the cluster membership information indicates that the one of
the plurality of nodes is a current member of the computer system cluster.

7. **(Currently Amended)** The method of claim 1 further comprising:
writing cluster membership information to the coordinator virtual device
corresponding to the ~~at least a~~ portion of ~~[[a]]~~ the physical data storage
device.

8. **(Currently Amended)** The method of claim 1 wherein the coordinator virtual
device corresponding to the ~~at least a~~ portion of ~~[[a]]~~ the physical data storage device
further comprises cluster membership information.

9. **(Currently Amended)** The method of claim 1 wherein the coordinator virtual
device corresponding to the ~~at least a~~ portion of ~~[[a]]~~ the physical data storage device is a
coordinator volume.

10. **(Currently Amended)** The method of claim 1 wherein the detecting when a computer system cluster, ~~including a plurality of nodes,~~ is partitioned further comprises:
monitoring a network coupled to each of the plurality of nodes for a heartbeat
signal; and
determining when the heartbeat signal is not present for a specified period of time.

11. **(Cancelled)**

12. **(Original)** The method of claim 1 encoded in a computer readable medium as instructions executable on a processor, the computer readable medium being one of an electronic storage medium, a magnetic storage medium, an optical storage medium, and a communications medium conveying signals encoding the instructions.

13. **(Currently Amended)** The method of claim 1 further comprising:
allowing at least one of the plurality of nodes of the computer cluster to
exclusively access the ~~at least a~~ portion of ~~[[a]]~~ the physical data storage
device.

14. **(Cancelled)**

15. **(Currently Amended)** A system comprising:
a first data storage device;
a virtual device configuration server coupled to the first storage device and
including a first memory and a first processor configured to provide a
coordinator virtual device corresponding to ~~at least~~ a portion of the first
data storage device;
a plurality of virtual device configuration clients configured as a computer system
cluster, ~~at least one~~ a first of the plurality of virtual device configuration
clients including a second memory and a second processor configured to:
detect when the computer system cluster is partitioned;
attempt to gain control of the coordinator virtual device corresponding to
the ~~at least a~~ portion of the first data storage device; and
remove the ~~at least one~~ the first of the plurality of virtual device
configuration clients from the computer system cluster when the
attempt to gain control of the coordinator virtual device is
unsuccessful so that the first of the plurality of virtual device
configuration clients lacks access to the portion of the first data
storage device.
16. **(Cancelled)**
17. **(Original)** The system of claim 15 wherein the first data storage device is at
least one of a disk drive, a JBOD, a disk array, and an integrated circuit.
18. **(Original)** The system of claim 15 wherein the first data storage device is
coupled to the virtual device configuration server via a network.
19. **(Original)** The system of claim 15 wherein the virtual device configuration
server is a volume server, wherein the coordinator virtual device is a coordinator volume,
and the plurality of virtual device configuration clients is a plurality of volume clients.

20. **(Currently Amended)** The system of claim 15 wherein the ~~at least one~~ first of the plurality of virtual device configuration clients is further configured to read cluster membership information from the coordinator virtual device corresponding to the ~~at least~~ a portion of the first data storage device.

21. **(Currently Amended)** The system of claim 20 wherein the ~~at least one~~ first of the plurality of virtual device configuration clients is further configured to determine whether the cluster membership information indicates that the ~~at least one~~ first of the plurality of virtual device configuration clients is a current member of the computer system cluster.

22. **(Currently Amended)** The system of claim 15 wherein the ~~at least one~~ first of the plurality of virtual device configuration clients is further configured to write cluster membership information to the coordinator virtual device corresponding to ~~at least a~~ the portion of the first data storage device.

23. **(Original)** The system of claim 15 wherein the coordinator virtual device corresponding to at least a portion of the first data storage device further comprises cluster membership information.

24. **(Cancelled)**

25. **(Original)** The system of claim 15 wherein the first memory and the virtual device configuration server belong to at least one of a host computer system, a cluster node, a storage appliance, a network appliance, and a storage area network (SAN) switch.

26. **(Cancelled)**

27. **(Cancelled)**

28. **(Currently Amended)** An apparatus comprising:

a means for providing a coordinator virtual device corresponding to ~~at least a~~
portion of a physical data storage device;

a means detecting when a computer system cluster, including a plurality of nodes,
is partitioned;

a means for attempting to gain control of the coordinator virtual device; and

a means for removing ~~at least one~~ a first node of the plurality of nodes from the
computer system cluster when the attempting is unsuccessful so that the
first node of the plurality of nodes lacks access to the portion of the
physical data storage device.

29. **(Currently Amended)** The apparatus of claim 28 further comprising:

a means for reading cluster membership information from the coordinator virtual
device corresponding to ~~at least a~~ the portion of ~~[[a]]~~ the physical data
storage device.

30. **(Currently Amended)** The apparatus of claim 28 further comprising:

a means for writing cluster membership information to the coordinator virtual
device corresponding to ~~at least a~~ the portion of ~~[[a]]~~ the physical data
storage device.

31. **(Currently Amended)** The apparatus of claim 28 further comprising:

a means for determining whether cluster membership information stored in the
coordinator virtual device corresponding to ~~at least a~~ the portion of ~~[[a]]~~ the
physical data storage device indicates that the ~~one~~ first node of the plurality of
nodes is a current member of the computer system cluster.